

Appl. No. 10/710,797
Amdt. dated November 17, 2005
Reply to Office Action of October 7, 2005

AMENDMENTS TO THE SPECIFICATION:

Please replace the paragraph 39 with the following rewritten paragraph:

The supercharging assembly 14 is driven by the drive assembly 12 to compress induction fluid for the engine E. The illustrated supercharging assembly 14 broadly includes a case 26, a pair of centrifugal superchargers 28 and 30 housed within the case 26, and a transmission subassembly 32 drivingly connecting the superchargers 28,30 to the drive assembly 12 (see FIG. 8). Turning to FIGS. 2-8, the illustrated case 26 houses and/or supports the other components of the supercharging assembly 14 as well as the induction fluid flow control assembly 16. In more detail, the preferred case 26 generally includes three main case sections 34, 36, and 38 that cooperate to define a compressor chamber 40 and a transmission chamber 42. The case 26 is similar in many respects to cases utilized on Applicant's commercial superchargers, available in a variety of models under the designation ProCharger,® as well as the case described in detail in Applicant's Application for U.S. Letters Patent Serial No. 10/641,619, filed August 14, 2003, entitled CENTRIFUGAL COMPRESSOR WITH IMPROVED LUBRICATION SYSTEM FOR GEAR-TYPE TRANSMISSION ("Jones '619 Application"), which is hereby incorporated by reference herein. However, it will be appreciated that the illustrated case section 34, although volute shaped for aesthetic purposes, primarily serves as a hood to house components (including components that do compress air) in the compression chamber 40 defined therein rather than as an air compressing-volute.

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Please replace the paragraph 40 with the following rewritten paragraph:

The case section or hood 34 presents a centralized inlet opening 44 (see FIG. 4) through which fluid enters the case 26. A filter 44a (see FIG. 2) is preferably provided around the inlet opening 44, as shown, or somewhere upstream from the opening 44. Although not illustrated, the inlet opening 44 may alternatively communicate with a forwardly open conduit (not shown) that extends toward the front of the powered vehicle T, such that air flow to the supercharging assembly 14 is facilitated when the vehicle T is moving in a forward direction. The case section hood 34 further presents an outlet opening 46 communicating with the intake manifold IM via the conduit IC (see FIG. 2). As will subsequently be described in detail, flow of induction fluid through the compression chamber 40 between the inlet and outlet openings 44,46 is directed and controlled by the flow control assembly 16. In this regard, in order to enable sufficient clearance for the components of the flow control assembly 16 housed therein, the illustrated case section hood 34 is somewhat enlarged relative to the case illustrated in the Jones '619 Application previously incorporated herein and includes a protracted hat section 34a, but is otherwise shaped to resemble Applicant's prior cases.

Please replace the paragraph 41 with the following rewritten paragraph:

The case section hood 34 is fastened to the middle case section 36 so the sections 34,36 cooperate to define the compression chamber 40 therebetween. Similar to the case illustrated in the Jones '619 Application, each of the sections 34 and 36 are complementally configured for

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coupling to one another, such as with threaded screw-type fasteners 48 (see FIGS. 2 and 3). However, it will further be appreciated that such assemblage is well known in the art and therefore this structure is not shown in the somewhat schematic views of the case 26 in FIGS. 4-8. The case section 36 is configured to fluidly isolate the compression and transmission chambers 40,42 and to support the superchargers 28,30 in the compression chamber 40. In this regard, the upper surface of the case section 36 faces the compression chamber 40 and includes a pair of annular rings 50 and 52 formed therein, each being configured to receive one of the superchargers 28,30 (see FIGS. 4 and 8). For purposes that will subsequently be described, the case section 36 further includes a pair of impeller shaft openings (with only the right-hand opening 54 being shown in FIG. 8) concentrically positioned in a corresponding ring 50,52 and each extending through the case section 36 from the compressor chamber 40 to the transmission chamber 42. Although not shown in the quasi schematic FIG. 8, similar to the middle case section detailed in the Jones '619 Application, the opposing face of the case section 36 is configured to support various components of the transmission subassembly 32, such as having bearing sockets and seal recesses formed therein.

Please replace the original Abstract with the following rewritten Abstract:

A multi-phase centrifugal supercharging system (10) constructed in accordance with the principles of a preferred embodiment of the present invention and configured for supplying compressed induction fluid to an engine (E) is disclosed. The illustrated air induction system (10) broadly includes a drive assembly (12) powered by the engine (E), a supercharging assembly (14)

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driven by the drive assembly (12) to compress induction fluid, and an induction fluid flow control assembly (16) in communication with the supercharging assembly (14) to control operation of the supercharging assembly (14) and cooperating therewith to deliver the compressed induction fluid to the intake manifold (IM) of the engine (E). The supercharging assembly (14) includes a pair of centrifugal superchargers (28 and 30) that are phased by the control assembly (16). The drive assembly (12) is a simple direct belt drive that continuously operates the superchargers (28,30) at a constant ratio relative to the rotation of the crankshaft (C). The flow control assembly (16) phases the superchargers (28,30) between multiple operating phases, including a series phase (172) and a parallel phase (176), to supply constant target boost to the intake (IM) over the entire rev range of the engine (E).